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Cities and the Nation's Disposal Crisis

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A Report of the
National League of Cities and the U.S. Conference of Mayors
Solid Waste Management Task Force

Prepared under grant S-802248
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March 1973

National League of Cities
United States Conference of Mayors
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CONTENTS

INTRODUCTION iv

THE TASK FORCE ON SOLID WASTE MANAGEMENT v

OVERVIEW 1
- The Problem 1
- Highlights of the Assessment 4

HIGH PRIORITY RECOMMENDATIONS 7

A FRAMEWORK FOR SOLUTIONS: INTERGOVERNMENTAL ROLES 13

THE NATURE OF THE SOLID WASTE CRISIS: THE CITIES' PERSPECTIVE 17
- Cities and the Disposal Crisis: Rising Demands, Decreasing Sites 17
- A Case in Point: Disposal Alternatives and Restrictions 19
- Cities and Resource Recovery: The Financial Reality 19
- Cities and Collection Efficiency: High Payoff Potential 23

SOLID WASTE MANAGEMENT AND NATIONAL NEEDS 26
- National Priorities 26
- Resource Conservation 28
- The Energy Crisis 29
- Reduction of Waste Generation 30

FINANCIAL ASSISTANCE FOR RESOURCE RECOVERY 32
- Objectives 33
- Strategies 33

REGULATION AND SOLID WASTE MANAGEMENT 37
- Interstate, State and Local Planning 38
- Federal Legislation and Standards 38
- Interjurisdictional Contracts 39
- Regional Organizations 39
- National Disposal Sites 40
- Transportation 40

CONCLUSION 41

APPENDIX: THE SOLID WASTE NEEDS ASSESSMENT 43

INTRODUCTION

This report covers an intensive three-month study of solid waste issues by the National League of Cities and the United States Conference of Mayors. We have looked at municipal capability in the context of a basic federal strategy toward comprehensive solid waste management. We have examined major issue areas including collection and transportation, disposal and resource recovery, regulation and source reduction, financing and economic incentives, appropriate intergovernmental roles and problems peculiar to municipal management. Within this tight time frame, we have also assessed the financial, managerial and technical assistance needs of the nation's cities in solid waste management.

The principal vehicle for our study has been the 15-member National League of Cities and U. S. Conference of Mayors Solid Waste Management Task Force. The members of the Task Force represent eleven municipalities, three state municipal associations and one regional council of government.

In conjunction with the work of the Task Force, we have carried out a Solid Waste Needs Assessment. Questionnaires were sent on January 15, 1973, to almost half of the nation's 805 cities over 100,000 population and a random sample of 200 drawn from cities with under 75,000 population. A preliminary tabulation of the 138 questionnaires returned before February 15, 1973, appears in the appendix. The initial 39 percent return rate is a remarkable response; but a follow-up mailing is still producing questionnaires in each day's mail. Final tabulations will be submitted at a later date.

THE NATIONAL LEAGUE OF CITIES AND THE UNITED STATES CONFERENCE OF MAYORS SOLID WASTE MANAGEMENT TASK FORCE

The National League of Cities (NLC) and the United States Conference of Mayors (USCM) Solid Waste Management Task Force, listed on the next page, met in Washington, D.C., for three, two-day meetings: December 19-20, 1972; January 15-16, 1973; and January 29-30, 1973. This group of mayors and city administrators combine more than 150 years of experience in municipal government and almost 50 years of direct experience with solid waste problems. The interest and participation of the Task Force were gratifying: several cities sent additional representatives at their own expense to assist with the heavy work load.

The Task Force report will be reviewed by the respective Environmental Policy Committees of the National League of Cities and the United States Conference of Mayors. Each committee will then make recommendations to its policy body, the USCM committee at the Annual Conference of Mayors, June 16-20, 1973 and the NLC committee at the Congress of Cities, December 2-6, 1973.

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OVERVIEW

THE PROBLEM

The disposal of wastes and the conservation of resources are two of the greatest problems to be understood and solved by this nation in the latter third of this century. With almost half of our cities running out of current disposal capacity in from one to five years, America's urban areas face an immediate disposal crisis. The cities' management of solid waste will have to be conducted in the face of two critical trends:

1. The sky-rocketing volume of solid waste.

2. The sharp decline of available urban land for disposal sites.

The rapid increase in solid waste generation, so characteristic of the nation as a whole, is even more pronounced in cities. In the past 50 years, the amount of waste discarded per person in the United States has doubled. In cities, however, solid waste volumes are estimated to have almost doubled in the past 20 years. The urban percentage of the total population, now 74 percent, has increased 10 percent since 1950. Between 1958 and 1976, packaging consumption (90 percent of which is disposed) will have increased an estimated 63 percent. Solid waste is growing five times faster than the population; cities must dispose of 20 percent more solid waste per person than other areas.

In other words, during the five-year amortized lifetime of one collection vehicle, a single city's waste load has averaged an estimated increase of between 15 and 20 percent. It is not surprising that disposal sites and disposal methods are ranked as the most pressing municipal solid waste needs.

The increased demands upon local waste management are complicated by the relationship between solid waste disposal and other environmental control systems. Federal policies and regulations aimed at protection of the nation's air and water have produced

immense waste disposal consequences for cities. Both the increase of semi-liquid sludges and the prohibition against incineration in major cities have raised significantly the land requirements for municipal disposal.

As a result, at least half of our cities cannot rely totally upon land disposal of wastes within their own jurisdictions; they must consider other methods of disposal that do not require great areas of land.

In order to increase the amount of land available for disposal sites, multijurisdictional efforts have been tried. These efforts are commendable, but several impediments make them difficult, sometimes impossible, to achieve. Federally established freight rates and state laws relating to transportation of solid waste across interstate lines are prime inhibitors.

With land disposal sites at a premium and with an increase in other environmental concerns, the recovery rather than the disposal of potential resources is attractive in theory.

For cities, the lack of resource recovery opportunities has driven total disposal costs even higher. An estimated 16 to 24 percent of the nation's solid waste is potentially recoverable and reusable. Yet, cities are forced to expend $6 billion annually for collection and disposal; each year cities dispose of metals alone worth $5 billion, according to several estimates. Recovery and recycling, however, are not viable because they are not economically profitable. The markets for recycled materials are severly limited due to federal policies which favor the use of virgin materials and discourage, even penalize, the use of recycled materials. There are no market incentives in force for recycled materials; virgin materials, on the other hand, receive the benefit of federally established depletion allowances and capital gains tax credits. Even if cities were to recycle solid waste, the considerations of the marketplace would make it impractical.

Cities in our survey, when asked what they would most like to see embodied in new Federal solid waste legislation, listed the enhancement of recycling and resource recovery as their number one preference. It is not the choice of cities that only one percent of municipal wastes are recycled; it is an aggregate choice compelled by federal policies, limited markets and consumer preferences. Without markets for recovered resources and large scale recycling, cities are left to dispose of wastes they did not create on land they no longer have.

Financially, cities are already bearing the national burden of increasing disposal costs. Of the total direct solid waste expenditures for federal, state and selected large local governments in FY 71, 98 percent came from local governments. The estimated annual cost to cities of solid waste collection and disposal is $6 billion. It is the third largest local expenditure funded solely from local revenues. A dramatic example of local-federal inequities is this: Our 48 largest cities are spending nearly 50 percent of their environmental budgets for solid waste management, while the Administration's proposed federal budget for FY 74 earmarks only one percent of the federal environmental dollar for solid waste and deals with only one concern--the disposal of hazardous wastes.

Ultimately, the highest costs and the most crucial losses, in the absence of a national program of resource recovery, go beyond city budgets to the nation's declining reserve of natural resources. For a nation facing inevitable resource scarcity, it is highly significant that current federal policy shows no awareness of the relationship between the generation and disposal of solid wastes and the depletion of national resources.

It is clear that a federal solid waste program limited to regulation of hazardous wastes will not provide the national initiatives necessary to address the range of solid waste issues at hand. Regulation of hazardous wastes, while important in a comprehensive strategy, will not--by itself--deter the land disposal crisis, few cities (only 25 percent of our survey) use landfill sites for hazardous waste disposal. Regulation of dangerous wastes will not reduce

the volume of wastes; it will not reduce the cost to cities of handling and disposing of those wastes; and it will have little effect on the nation's loss of resources. Moreover, it will ignore local demands and national opportunities for resource recovery and major technical assistance.

In order to meet the challenges of waste disposal and resource conservation, the following federal actions are imperative:

- Solid waste policy must be related to the larger policy issue of total resource conservation.

- Federal solid waste legislation should set the goals and implement the programs to achieve reduced refuse growth and maximum feasible recovery of resources.

- Solid waste programs at all levels of government should reflect a higher national priority for solid waste management.

- Federal programs for resource conservation should include the provision of solid waste disposal and resource recovery facilities to meet the requirements of established environmental standards.

HIGHLIGHTS OF THE ASSESSMENT

In the following sections of the report, the assessment made by the Task Force will be discussed in detail. In the course of the assessment, the need for intergovernmental coordination came into focus. Here are the highlights of the needs to be met.

Solid waste management problems are national in scope and interjurisdictional and interstate in character.

The operational demands of waste management and disposal fall upon local governments, especially cities. But program support functions--training, research, technology demonstration and transfer, management and financial assistance--plus enhancement of resource recovery on a national scale are more properly the missions of the federal government.

Ultimate solutions of solid waste disposal frequently exceed the internal capabilities and geographic limitations of any single political jurisdiction

The reduction of solid waste at its source is a national responsibility.

The national disposal crisis is the result of national forces and practices which are beyond the scope of local government capacity to resolve and are not the product of local government policies.

Progress in meeting the solid waste challenge requires an expanded federal role.

Federal policies have, in several instances, compounded solid waste collection and disposal problems for cities; therefore, the federal government has a responsibility to help cities cope with the problems its policies have created.

Several actions critical to improved waste management and increased resource recovery cannot be taken by local governments; 20 such actions in five functional areas have been identified as appropriate to the federal role.

Resource recovery is a federal responsibility and it requires equitable policy treatment.

Cities cannot recycle wastes on a large scale until recycling becomes economically profitable on a large scale. The federal government should adjust its discriminatory freight rates, its depletion allowances for virgin materials, and its procurement practices to provide positive incentives for increased utilization of recycled materials.

Collection is primarily a local responsibility.

Those cities losing productivity should make all-out efforts to upgrade management capability and optimize systems efficiencies.

Cities rate collection as the third most pressing problem in solid waste and rank technical assistance number two among needs that should be addressed in federal legislation.

At the local level, the agenda includes varying prescriptions for varying performance and capability levels.

In addition to upgrading collection productivity, many municipalities need to cease open dumping and convert to sanitary landfill practices immediately. Others need to consolidate their disposal needs into central multijurisdictional landfill operations. Still others are in a position to consider recycling and energy recovery options--if they can get financial assistance and see evidence of sure markets.

Proper cost accounting procedures and maximal cost effective solid waste management systems must become operational realities across the country as they are now in several model municipal and county programs.

States should implement performance guidelines and state solid waste management plans in keeping with federal regulations and in consultation with local governments.

Multijurisdictional approaches to disposal and resource recovery necessitate some degree of uniformity in regulation. State plans should address the critical shortage of disposal sites and state legislatures should alleviate limitations on interstate and intrastate transportation of solid waste. Cities need latitude to set more stringent environmental standards where necessary.

HIGH PRIORITY RECOMMENDATIONS

The cities and counties of the nation are, and properly ought to be, the focal point for confronting the challenges of solid waste management. The Task Force study of municipal capability to meet those challenges reveals varying efforts and capability levels among cities. The Task Force assessment, however, also finds that cities are forced to contend with solid waste problems which, in scope and magnitude, are not produced by local policies. The solutions to these problems require: (1) resources and support functions that exceed the internal capability of all cities; (2) available land areas for disposal, which many cities increasingly lack within their political boundaries; and (3) technology for resource recovery.

Furthermore, the Task Force review of solid waste issues finds that solid waste management, especially current waste generation and disposal practices is directly related to the larger issue of national resource conservation.

The Task Force, therefore, directs its attention to those policies and practices at the national, state and local levels which both contribute to and offer the best prospects for alleviating the following: (1) the magnitude of national waste problems, (2) the timing and complexity of the nation's disposal crisis, (3) the technological and economic limitations on large scale resource recovery, and (4) the cause and effect, push-pull relationships between current waste generation and disposal practices and the nation's natural resource limitations. Presented below are the steps that must be taken, at all levels of government, if we are to further upgrade municipal solid waste management, confront the nation's disposal crisis, and properly administer our natural resources.

The National League of Cities and United State Conference of Mayors Solid Waste Management Task Force specifically recommends the following:

1. Recognition must be given to the fact that solid waste management transcends local jurisdictions and funding capabilities and that satisfactory progress toward adequate improvements will require continued federal financial support.

The cities and counties of the nation constitute the front line for achieving effective solutions to solid waste pollution problems and for implementing a national program of resource recovery. But critical in this view is the corollary assertion that while local governments should be the focal point for optimum solid waste management, they cannot--by themselves--be the fulcrum. The federal government is responsible for policies that have compounded the waste disposal crisis and prevented large scale resource recovery. Federal funding levels should reflect the national dimensions of solid waste management and resource recovery.

We recommend below market interest federal loans for resource recovery capital facilities meeting certain criteria. We also recommend grants for planning, training and demonstration programs. Full funding at previously authorized levels should be a minimum guideline for calculating federal support.

2. Federal assistance must be given to local governments to optimize the productivity of collection systems.

The fundamental fact that solid waste collection costs are--and will continue to be--several times the costs of disposal, points up the critical importance of optimizing productivity of local collection. Looking at the country as a whole, improvements in municipal collection systems offer high immediate payoff. EPA's Major Technical Assistance Program is demonstrating significant results in several cities and should be expanded.

Collection improvement mechanisms should include federally sponsored voluntary evaluations by interdisciplinary management teams comprised of personnel experienced and qualified in municipal solid waste management. The results of studies by personnel without practicial experience at the municipal level have limited value.

Federal demonstration projects require better, more organized mechanisms for feedback to the cities and counties. Research and development must be coupled

with more effective means of technology transfer. A central reference library of actual performance and cost effectiveness of various methods is needed for municipal solid waste decision makers.

However, collection improvement is a short term priority that does not help to solve the corollary problems of waste generation or disposal.

3. Development of major disposal, land reclamation and resource recovery capabilities must be encouraged by removing barriers to interstate and intrastate transportation of municipal solid wastes.

Generation of solid waste does not recognize political boundaries, but the handling of solid waste does. Cities, particularly those whose disposal problems are affected by interstate and intrastate restrictions, stand in great need of state and federal assistance in the reduction of solid waste transportation barriers. These barriers to interstate commerce are created by state laws, are beyond local authority and jurisdiction, and are a federal responsibility under the Constitution. There is an urgent necessity, therefore, for federal action to remove interstate commerce barriers, to correct freight rate discrimination against solid waste and recycled materials and to pre-empt non-importation laws.

We endorse interstate multijurisdictional and intrastate regional approaches to disposal and resource recovery, and we recommend additional state and federal leadership in those cases where these strategies are constrained by state boundaries or regulations.

States, in consultation with local governments, must provide critically needed assistance in planning and establishing regional disposal sites.

4. Federal policies that negatively impact resource recovery and establishment of positive incentives must be adjusted in order to encourage maximum feasible recovery of resources from municipal and other solid waste systems.

Resource recovery will neither impact on nor improve local solid waste management until it becomes

profitable economically. The overriding consideration in this recommendation is the need for federal action on policies and practices which discourage and impede the handling of solid waste or the processing, marketing and reuse of recycled materials. The policies include depletion allowances and tax credits for virgin materials, higher rail freight and shipping rates for solid waste and recycled materials than for virgin materials and procurement policies which favor virgin materials.

The federal government should either reduce the negative impact of these policies by a downward adjustment of depletion allowances and freight rates or it should establish subsidies in the form of investment and tax credits to encourage the recovery and full use of resources. Initially, federal, state and local governments must place a higher priority on the consideration of recycled materials in their procurement policies. Although governments represent a multi-billion dollar potential market for recycled materials, the private sector must follow.

The federal government should sponsor an expanded demonstration program which focuses greater attention on market factors and demand pull issues for municipal resource recovery.

5. A national effort is needed to decrease the volume of solid wastes generated in the United States; this must include attention to packaging standards.

The brunt of today's disposal costs is felt neither in the market place nor in the federal budget, but in city and county budgets. The sky-rocketing volume of solid waste, however, is created by national economic forces that transcend local government. Unless we reduce the total volume of solid waste generated nationally, and unless market prices begin reflecting product disposal costs, local governments will continue to be overburdened with the flow and the financing of the nation's solid wastes.

Government regulation and private cooperation must be combined to combat solid waste generation. Dependance upon the private sector alone has not shown enough results. Measures to restrict excessive waste

production are in the national interest. Such measures need to address the recyclability and disposability of products and packaging. Packaging practices and product characteristics that generate excessive solid waste and increase disposal problems shoudl be regulated.

National legislation is urgently needed that will provide for both immediate federal action and further study and evaluation of proposed strategies. Emphasis should be given to both legislative and economic strategies that utilize positive incentives for reduced refuse growth.

6. Efforts must be made to advance the state of the art on a continuing basis.

EPA demonstrations using solid waste as alternative and supplementary energy sources are an important, but limited, step in moving toward solutions to the solid waste challenge. The need for further development of separation and recycling technology and further demonstration of new and improved solid waste management, disposal and resource recovery systems still exists.

Economics is obviously a more critical roadblock to resource recovery than technology; nevertheless, additional technological improvements are needed. The view that a magical new process will be found to solve solid waste problems is recognized as illusory, yet we also are skeptical of the assertion that the technology is here and must simply be implemented.

We, therefore, call for establishment of a solid waste research and development advisory board composed of state and local government and private sector representatives. Broader input to research and development decisions and improved communication of results are needed. But the top priority for the advisory board would be an assessment of the focus and immediate technological impact of research and development projects as well as the overall applicability of these projects to municipal solid waste and resource recovery needs.

7. The recovery and transfer of energy from solid wastes must be integrated with general energy planning and studies.

Solid waste can and should be considered as supplemental fuel. Recent technical breakthroughs, sponsored by EPA, have deomonstrated some initial success in the partial replacement of coal and oil with mixed municipal refuse.

Previous federal research on integrating solutions to the solid waste crisis with solutions to the energy crisis has not been funded at appropriate levels. Major commitments should be made to stimulate energy recovery from solid wastes.

> ...the key questions... who is in charge of what? And who should be?
>
> Citizen's Advisory Committee on Environmental Quality, Annual Report, 1972

A FRAMEWORK FOR SOLUTIONS: Intergovernmental Roles

Efficient delivery of public services and effective implementation of public policy in our federal system depend upon the sharing of powers and responsibilities among the three levels of government. Effective solid waste management in the future will be directly linked to the development of intergovernmental relationships built on communication and cooperation and directed to the solution of solid waste problems.

If we are to confront the problems of waste generation, collection and disposal, and if we are to move forward with resource recovery and conservation, an appropriate division of responsibilities is imperative. In light of the high priority matrix presented in the previous section, the Task Force views the respective intergovernmental roles as follows:

FEDERAL SOLID WASTE MANAGEMENT

Regulation

1. Establish performance guidelines in conjunction with the states, subject to local government interpretation.
2. Enact legislation aimed at packaging standards to reduce excessive packaging and to encourage recyclable compositions.
3. Remove transportation barriers and help resolve boundary restrictions against proper disposal across jurisdictional lines.
4. Enforce proper solid waste management practices among all federal agencies.

Resource Recovery

1. Stimulate market development with incentive structures.
2. Correct inequities in freight rates and materials policies.
3. Give higher priority to use of recycled materials in procurement policies.
4. Foster combination multi-purpose siting for optimum land use.
5. Encourage landfilling primarily for residuals from resource recovery processes, but assist and support local governments facing critical site shortages for primary landfills.
6. Provide loans at below market rates for resource recovery facilities construction.
7. Continue state and local planning grants and training grants.
8. Encourage, through financial incentives, energy and related material recovery by private firms for their own use and/or resale.

Research and Development

1. Increase and expand national energy studies to include solid waste as a supplemental fuel.
2. Investigate the feasibility of standardization of collection containers and vehicles to achieve operational savings and to assure employee safety.
3. Expand the deomonstration grants program, focusing portions of it on market (demand pull) issues, the relationship of government regulation and market forces, and the management systems to which prototype technologies are linked.
4. Establish a research and development advisory board composed of state and local government and private sector representatives to assure focused applicability of limited research monies.

Management Assistance

1. Expand and refine assistance by creating interdisciplinary teams tailored to meet both practical and divergent local needs. Increased staff levels and budget for MTA to service cities immediately and provide follow-up continuity.

2. Support adequate training programs for management and operational personnel of solid waste disposal and resource recovery systems.

Public Information

1. Re-evaluate public information campaigns so that issues of solid waste and resource recovery receive treatment and exposure comparable to their importance to the nation.

2. Design positive media campaigns identifying current economic impediments to resource conservation and recovery and suggesting the public and private sector actions necessary to achieve national goals of reduced refuse growth and optimum resource conservation.

STATE SOLID WASTE MANAGEMENT

Regulation

1. Implement performance guidelines consistent with federal standards and subject to local government interpretation.

2. Enact legislation aimed at packaging standards to reduce excessive packaging and to encourage recycable compositions.

3. Remove transportation barriers and help resolve boundary restrictions against proper disposal across jurisdictional lines.

4. Plan, provide and regulate regional disposal sites.

5. Allow local governments to maintain local standards where they are more stringent than state or federal standards.

Resource Recovery and Disposal

1. Move to alleviate critical siting shortages through interstate and intrastate regional disposal sites.

2. Eliminate transportation and non-importation barriers while assuring proper regulation of solid waste in transit.

3. Facilitate where possible multijurisdictional solid waste management utilities through enabling legislation for cooperative agreements between cities and counties.

4. Give priority to use of recycled materials in procurement policies.

LOCAL SOLID WASTE MANAGEMENT

Collection

1. Collect municipal solid wastes or contract for collection services in an efficient and cost effective manner.
2. Upgrade collection productivity and thereby reduce collection costs (80 cents of the local solid waste dollar) to the optimum extent possible.

Resource Recovery and Disposal

1. Implement systems that incorporate mixes of proven processes customized to meet a particular set of local needs and circumstances.
2. Combine, where economies of scale dictate, transfer, separation, volumetric reduction, disposal and recycling of municipal solid waste into multi-jurisdictional or regional arrangements.
3. Dispose of municipal solid waste in properly controlled sanitary landfills.
4. Consider landfilling primarily for residuals; and, where sanitary landfilling is the most feasible disposal method for the time being, regard it as an interim procedure until such time as it can be integrated into more environmentally acceptable and cost effective approaches.

Management

1. Maintain proper and adequate cost accounting procedures for accurate, speedy identification of costs and cost breakdowns and for optimum flexibility and accountability in solid waste management and planning.
2. Upgrade systems efficiencies where possible for maximum cost effectiveness.
3. Establish standards and implement practices which assure and guard the safety of departmental workers, and require the same of contracting companies.
4. Give priority to use of recycled materials in purchasing policies.

> The simple fact is that there will be no increased solid waste utilization, unless, and only to the extent that, recycling becomes economically profitable to all concerned.
>
> M. J. Mighdoll,
> Executive Vice President
> National Association of
> Secondary Materials Industries

THE NATURE OF THE SOLID WASTE CRISIS:The Cities' Perspective

The first law of solid waste management is this: Regardless of how, where, or in what amounts solid waste is generated, local governments (or private firms) have to collect it, process it and ultimately dispose of or recycle it.

CITIES AND THE DISPOSAL CRISIS: RISING DEMANDS, DECREASING SITES

National volumetric increases in solid waste are well documented. Our population increases only one percent annually, while wastes are increasing at the rate of five percent. Municipal wastes account for over 250 million tons of national trash heap: 28 billion bottles, 48 billion cans, 4 million tons of plastic containers, 30 million tons of paper, 100 million tires, over 3 million autos. We throw away twice as much per capita today as we did in 1920, and the total volume of solid waste is expected to triple by 1980

The significance for cities is the fact that urban economies produce 20 percent more solid waste per person than rural areas. Since the urban population has grown from 64 percent of the total population in 1950 to 74 percent in 1970, the quantity of solid waste concentrated in cities has increased by a substantial percentage. In addition, from the standpoint of health and aesthetics, solid waste is a noticeable and threatening problem for city residents.

The interrelationship between solid waste disposal practices and other environmental control systems is

particularly critical to cities; turning off one problem has often meant turning on another. As a result of new, and needed, water pollution control programs, for instance, local solid waste management must now encompass larger requirements for land disposal of semi-liquid sludges. Incineration bans due to air quality regulations are another prime example.

Yet at precisely the time when disposal requirements are rapidly increasing for all cities, most cities are running out of available land. In our Solid Waste Needs Assessment, the lack of adequate disposal sites ranked number one as the most pressing problem for municipal solid waste management. And 46.5 percent of our respondents indicated their city will run out of landfill capacity for current and anticipated waste loads in from one to five years.

As we have pointed out, urban areas are increasingly subject to restrictions on the use of land for disposal of solid waste within their political jurisdictions. At the same time, remote disposal to areas with less population density is becoming more difficult because of local, county and state restrictions.

The land which is most available for new landfills and the lands which are most in need of reclamation are normally outside the political jurisdiction of the municipalities which need them most. In some circumstances, the optimal siting of new resource recovery plants would be outside the usual political jurisdiction. Furthermore, a bewildering maze of state and local laws arbitrarily constrain any productive bargaining process between would-be "exporters" of solid waste and potential "importers." At the present time, there is no recognized means of negotiation between municipalities seeking -- and willing to pay for -- additional landfill capacity and political jurisdictions with available space.

By forcing disposal and resource recovery facilities to remain within municipal boundaries, all solutions to the solid waste disposal problem are driven to even higher cost levels. Since more cost effective alternatives are feasible, such as land reclamation in rural areas or rail transportation to regionally located recovery centers, it does not make economic sense to process solid wastes in areas of high population density. Both the environmental and financial consequences of

holding or recycling wastes in our cities are undesirable.

A CASE IN POINT: DISPOSAL ALTERNATIVES AND RESTRICTIONS

There are two approaches to meet the disposal crisis: primary landfilling and resource recovery combined with residual landfilling. Primary landfill, although a short-term solution, is essential for many communities since construction of new processing plants is costly and since the building of relatively unproven recycling facilities is risk-laden. Ironically, this is the problem facing both New York City (population 8,000,000) and Johnsonville, South Carolina (population 1,100). Recycling and resource recovery as a solution is potentially the most environmentally cost effecitve and responsible approach. (Note that least cost solutions, such as landfilling, are not the most environmentally cost effective solutions.) Even with resource recovery systems, sites are still needed for landfilling of the residue, and it is often most beneficial to site new resource recovery plants outside of the using communities due to consideration of economies of scale and land acquisition costs.

By substituting and enacting uniform environmental standards, the federal government could create a context for negotiation in which the needs of both parties could be balanced, as well as accommodating the legitimate interests of other affected jurisdictions.

CITIES AND RESOURCE RECOVERY: THE FINANCIAL REALITY

Sound solid waste management cannot be limited to land disposal; the solid waste challenge can only be met through a coordinated, viable program of disposal and recovery. But recovery is not viable when it is not profitable. Clearly, recycling options are determined by markets, and the markets for cities have been severely limited.

The few successes are exceptions which cannot be replicated on either a regional or a national scale. The British pound and certain other European currencies, for example are printed from time to time on the recycled waste of a major city in the southern United States. This city's agents have explored markets as far away as Australia. Their comprehensive marketing efforts are laudable, but cities should not have to build international

marketing capability for resources that could be reused at home.

The experience of cities with recycling has been one of scattered, mostly isolated, success. Ironically, smaller municipalities with low volumes who carefully negotiate their markets -- and genèrally have the aid of an industry association looking for public relations opportunities -- have a better chance at recycling. Heat or energy recovery is being tried by some larger cities, all of which can be counted on one hand -- even if EPA's 208 demonstrations are included.

On the other side of success, where large scale markets are nonexistent and recycling can only be done on a limited basis or at a net loss, we find an endless number of discouraging examples.

- Cities investigate a tire recycling center in another state and find that revenues from tire sales will not cover rail freight costs to the out-of-state location.

- In a section of one of our states, where 26 pulp and paperboard mills are located, cities looking for paper markets find that most of the area's salvated and recycled paper is exported.

- Cities find raw materials, imported from thousands of miles away, being used within a few miles of where they landfill those same resources.

An ecology conscious public enthusiastically endorses the theory of recycling and criticizes city administrators for not getting on with the practice of it. But local governments have to deal with the economics of recycling, and those market realities have forced cities to adopt a "wait and see" approach. Cost conscious city governments simply have not been able to see enough light at the end of the resource recovery tunnel

Yet cities demonstrate an interest in the potential for recycling, in spite of the present lack of markets. When asked what they would most like to see embodied in new solid waste legislation, the number one preference among our respondents was the enhancement of recycling and resource recovery. The irony of resource recovery,

then, is that cities, as one mayor expressed it, "want it, but can't do it." Cities favor legislation that will bring about increased recovery of valuable resources because it is not now economically feasible.

The Task Force believes that solid waste recycling and municipal resource recovery have been oversold but understimulated by the Federal Government. Secondary materials now represent an $8 billion industry annually. And while it is true that recycled copper, for instance, accounts for almost half of our domestic supplies or that almost a third of our aluminum comes from recycled sources, the recycling rate in many product areas has not kept up with the rates for years past. In fact recycled materials have declined proportionately overall since World War II. Furthermore, only one percent of today's municipal solid wastes are recycled.

Cities want and need to combine environmentally acceptable disposal methods with economically attractive resource recovery processes: only comprehensive approaches to solid waste management will work. So cities are seeking action on the economic disincentives which block resource recovery efforts.

Recyclers -- whether private firms or public governments -- have no incentives comparable to depletion allowances for virgin or natural resources. Because there are numerous incentives, subsidies and tax breaks for virgin materials, there are automatically numerous reasons for not selling, handling or buying recycled resources. In short, the depletion of our natural resources is rewarded, while the reuse and conservation of those same resources is penalized. Before cities can get into recycling to any significant degree, the federal government must intervene. Federal action is required because federal policies -- from depletion allowances to capital gains credits -- have contributed to the impasse.

Discriminatory freight rates are another factor contributing to a disadvantaged marketing position for recycled solid wastes. On the average, it costs about two-and-one-half times more to transport a ton of scrap iron by rail as it does to transport a ton of virgin ore. Before secondary materials handlers can buy and sell recycled municipal wastes in a competitive market and before cities can attempt rail haul of wastes to

distant sites for major land reclamation efforts, rate adjustments must be made. Since regulatory rates of the Interstate Commerce Commission have exacerbated the unfavorable economics of waste transport, federal action is required.

Government purchasing policies, as well as consumer preferences, also favor virgin materials and discriminate against recycled materials. Federal procurement for FY 72 totaled more than $30 billion. Federal, state and local government procurement constitute a potential multi-billion dollar market network for greater solid waste utilization. When these and other disincentives, which drive the costs of recycled materials upward, are corrected it will become not only environmentally desirable but also economically feasible to purchase greater quantities of recycled materials in both the public and private sectors.

Discussion of resource recovery is merely an academic exercise unless, and until, it leads to federal leverage for marketing breakthroughs.

As municipal solid waste managers, we do not have to be told about disincentives and limited markets for recycled materials--we have lived with them throughout our professional careers. As mayors and policy makers, we find it difficult to entertain the view that solid waste management is an exclusively local problem. We in the cities and our colleagues in county government are presented with a cascading solid waste stream whose source and generation transcends local jurisdictions and authority. We are expected to implement sound disposal programs on land we no longer have while contending with forces beyond our command, and we are expected to ponder resource recovery decisions under market conditions that are beyond both our power and authority to influence.

Most cities are seeking solid waste options for today and next year--not for ten years from now. The hard market realities of resource recovery have driven the majority of local governments to accept sanitary landfilling as the primary disposal method. Sanitary landfill is not the ultimate disposal method, of course, but for every local administrator, the decision comes down to costs per ton for collection and processing, immediate market potential of recovered resources, and

disposal requirements.

CITIES AND COLLECTION EFFICIENCY: HIGH PAYOFF POTENTIAL

We have delineated several factors, from private markets to public policy, which multiply and complicate the land disposal burdens of cities. The one thing these factors have in common is their transcendance of local jurisdiction and authority. These pieces of the solid waste management puzzle cannot be moved into place by local governments alone. They require intergovernmental cooperation of the highest order.

Collection is another key solid waste function with the same intergovernmental requirements, but in the operational context of local government. Collection costs are known to be 70 to 80 percent of municipal solid waste costs, therefore, cost reductions and increased service levels in collection can mean direct, immediate savings for local governments.

Cities rate collection as the third most pressing problem of solid waste management--after disposal sites and disposal methods. Collection is an area in which cities appear to have more control over the problem and the factors relating to both precipitation and solution of the problem. However, cities are the recipients of waste loads produced by national economic practices that transcend their boundaries. The only control cities have is over the efficiency and the cost effectiveness of collection systems.

Cities are recognizing both the need for and the benefits of investments and intensive efforts to upgrade collection productivity and reduce costs. The ratio of collection costs to disposal costs--between 70:30 and 80:20--has prompted a growing number of cities to take a closer look at collection in hopes of obtaining savings to defray disposal costs. Twenty cities have sought and received Major Technical Assistance (MTA) from EPA's Office of Solid Waste Management Programs (OSWMP) over the past year and 40 are now backlogged for future assistance as soon as limited OSWMP budgets and staff time permit.

We found that numerous cities are unaware that MTA is available on a voluntary request basis. Yet,

in our survey, financial and technical assistance ranked number two among those features cities would like to see embodied in new solid waste legislation. In light of such a high recognition factor among cities and in view of OSWMP's growing capability and experience in its Major Technical Assistance Program, optimal collection productivity offers the highest immediate payoff in the entire solid waste program. Every step taken by cities to upgrade collection efficiency and reduce costs translates immediately into direct cost/benefit impact. Every federal dollar channeled into technical and management assistance for collection will bring a significant return.

Experience in some cities indicates that collection efficiency can be improved without major expense.

- Where collection routes have been extended carelessly, linked with others indiscriminately or determined haphazardly, sections of cities or entire cities can be re-routed according to simple, systematic criteria. Unequal workloads can be rescheduled for lower labor costs and increased efficiency.

- When solid waste management functions are carried out by several departments,each department sees and manages only part of the total process. Management units can be reorganized to elimiate fragmentation. They can be structured to allow full control over and total accountability for solid waste functions.

Expensive high technology processes are not always necessary in every collection system. OSWMP's Management Information System and Five-Stage Improvement Process for collection systems have been tried and are working successfully in a number of cities. Both can be understood, applied and implemented without major equipment or capital cost requirements.

In reviewing OSWMP's program of Major Technical Assistance, the Task Force found consistent evidence of measurable impact and, in many instances, immediate savings.

For example:

- City X doubled the frequency of its collection, increased the number of dwellings served by 10 percent and achieved an annual savings of $30,700.

- City Y did not realize a direct savings but it implemented weekly collection which included all apartment buildings, increasing the total number of services by ten percent, at no cost increase to residents.

- City Z made investments in collection vehicles and major adjustments in coordinating collection of residential and bulky waste for a net savings of $64,000.

It is noteworthy that the biggest drag on EPA's cost/benefit ratios for the cities in which MTA projects have been completed is staff travel expense. Reduction of those necessary costs may be possible through other approaches. The National League of Cities and the United States Conference of Mayors, in conjunction with EPA, should explore the effectiveness and feasibility of delivering technical and management assistance through other mechanisms, such as specially designed seminars, intensive case study workshops, cassette magazines or video tapes.

But, a word of caution is in order: Improvements in collection and the interface with processing and disposal will not resolve the problems inherent in disposal and resource recovery.

> Once the trash truck drives away, solid waste disposal is someone else's problem.
> William E. Small

SOLID WASTE MANAGEMENT AND NATIONAL NEEDS

Decisions and policies on what we throw away and how and where we dispose of it can no longer be considered in isolation, for they effect linkages whose scope and impact are national indeed. The National League of Cities and the United States Conference of Mayors Solid Waste Management Task Force finds that all our problems in solid waste management relate to the low priority given to solid waste.

NATIONAL PRIORITIES

Throughout the environmental awakening that has swept the land in recent years, solid waste has been the weak sister of the environmental family. Even with the increased attention brought about by the Solid Waste Disposal Act of 1965 and the Resource Recovery Act of 1970 and with the consolidation of the Office of Solid Waste Management Programs in the Environmental Protection Agency, solid waste management is still largely ignored by the public.

If resource recovery and reuse are to become the cycles of the future, we must confront the truth about our environmental values. The relatively low priority given to solid waste is in evidence on every hand.

- A recent poll reported in Time (Dec. 25,1972) reveals that 81 percent of the sample support government spending for reducing water pollution and 80 percent support government spending for reducing air pollution; but solid waste pollution is not mentioned.

- The recent agreement between the United States and Russia on cooperation in the field of environmental protection contains extensive sections on air and water pollution, but only passing mention of solid waste management.

- A widely used political science text on urban governance devotes only a page and a half to solid waste management.

- In terms of federal funding, we have spent 50 times more money on water pollution than on solid waste and five times more on air pollution.

One of the major tasks at hand, therefore, is to correct the myth that solid waste is a "third pollution" in the sense of a less serious pollution and to confront it realistically as the problem it is--one adversely affecting public health and severely impacting natural resource conservation, as well as aesthetic and other environmental considerations.

We must begin facing up to a fundamental fact beneath the national solid waste disposal problem: When the refuse is hauled away, federal and state government, business and industry and the general public tend to forget about it.

The federal government forgets about it, or a reasonable percentage of its purchasing power would be directed towards utilization of recycled materials in its construction and procurement programs.

The states forget about it, or non-importation and interstate transportation of solid wastes would not be issues.

Business and industry do not give enough thought to it, nor do consumers, or our refuse growth would not be accelerating at the rate of five percent each year.

And local governments forget about it too, or we would not still have open dumps, and we would not need EPA's Mission 5000 program to close them.

We, therefore, find it imperative to raise the priority on solid waste at all levels of government. However, recommendation for a higher priority for solid waste management begins with disagreement over function and responsibility. The National League of Cities and the United States Conference of Mayors Solid Waste Management Task Force emphatically rejects the narrow assumptions and limited priorities reflected in a

federal role confined to regulation of hazardous and toxic wastes alone. We concur with the need to control the handling and disposal of these highly dangerous wastes, but we also believe it equally urgent to reduce the multiplying volume of all wastes and to reuse the maximum feasible portion of our waste stream. We endorse a "pay as you go" philosophy for local governments; but in a solid waste program limited to regulation of Class I or hazardous wastes, the federal government will not be paying its fair share of national disposal and resource recovery costs.

Furthermore, we believe that an integral part of the case for a higher solid waste priority is the relationship of solid waste to the broader issues of resource conservation.

RESOURCE CONSERVATION

A major policy objective, we believe, should be the relation of solid waste policy to the larger policy issues of total resource conservation. As a nation, we are moving toward inevitable resource scarcity, not growing abundance. Therefore, the efficient, economical recovery and use of all valuable solid waste constituents would measurably reduce the profligate depletion of our vital resource deposits, especially metals. A national program of recovery and reuse would also significantly reduce growing energy demands.

We have been sufficiently forewarned that reserves of most high-grade metals are exhausted in the United States. A report of the National Academy of Science, Resource and Man, pointed out some time ago our metals predicament: "It is clear that exhaustion of deposits of currently commercial grade is inevitable." We are spending $6 billion annually for collection of wastes and, according to the American Iron and Steel Institute, we are throwing away metals alone that are worth more than $5 billion. More conservative estimates range down to $1 billion in discarded metals, but almost everyone agrees that about one-fourth (estimates range from 16 to 24 percent) of the country's solid waste is potentially recoverable and reusable. We believe the rate is even higher.

The scrap orientation of the steel industry and the development of new adhesive coatings, which eliminate

tin contamination of steel cans, offer prospects for greater demand and easier recycling of cans. Metal recovery should be the order of the day in municipalities across the country. Chicago recovers 77 percent of its tin cans by magnetic separation, and cans constitute almost 70 percent of the metals in municipal wastes.

There is an emerging view that residential or consumer separation of paper--between one-third and one-half of all municipal wastes--would improve the economics of paper recycling significantly. Paper has a negligible heat value and municipal paper recycling has suffered because the contaminated paper of the waste stream is not marketable and machine separation is not yet possible.

The possibilities for resource recovery and conservation are real; they can be achieved through careful coordination of economic incentives, technology development and application at the federal level.

THE ENERGY CRISIS

Policies surrounding the needs of energy production and national resource conservation must be examined with regard to resource recovery. Evidence exists that large scale recycling could substantially reduce energy requirements.

- For example, it takes the electrical equivalent of 2,700 kilowatt-hours to make a ton of steel with coal, but it takes only 700 kilowatt-hours to reclaim a ton of steel in an electrical furnace.

- Stated another way, it takes 1.11 pounds of coal to produce one pound of steel from virgin ore, but only .22 pounds of coal when recycled materials are used.

- It takes six times as much energy to make aluminum from ore, compared to making it from recycled material.

The relationships between resource recovery and the energy crisis should be carefully studied and fully developed.

Recent technological innovations and the increased cost of alternative fuels have enhanced the relative value of solid waste as a supplemental fuel. The Congress should mandate studies by the appropriate federal agency(s) of the use of solid waste as a partial answer to the energy crisis faced by this nation. Congress should fund and require the appropriate federal department to study the possible building of offshore islands with solid waste. Such islands, if feasible, could become ideal sites for energy production, possibly using solid wastes as a partial fuel.

EPA demonstrations using solid waste as a partial replacement fuel are an important but limited step in moving towards a solution to the solid waste crisis. The potential of solid waste as a fuel should be integrated into all major energy studies being conducted on the national level.

REDUCTION OF WASTE GENERATION

If solid waste management were graphed as a linear process, 99 percent of the line would depict the attention given the middle phases (collection and transportation, volume reduction or compacting) and the end phase (disposal). The other one percent would reflect recycling efforts. The front end of the solid waste management process, source reduction, has been unattended for too long. What are the prospects for reduction of wastes at their source?

Voluntary action directed at source reduction has been slow to happen and seems unlikely on a national scale. Packaging standards are a spectre to the private sector, raising basic questions about our systems of production and marketing. It is easy to say waste production ought to be controlled, but working out methods and procedures and determining the guiding criteria are highly complex and intricate assignments. Nonetheless, it must be done.

The increased use of packaging materials is one probable reason that solid waste is generated at a rate that is five times as fast as the population growth rate. The oft-quoted report of the Midwest Research Institute shows a 30 percent increase in generation of solid wastes from 1958 to 1966 (from 404 pounds

to 525 pounds per person). The same report projects a 25 percent additional increase by 1976 - up to 661 pounds per person. But the most striking projection is that between 1958 and 1976 packaging consumption will have increased an estimated 63 percent.

Source reduction of wastes should be a fundamental first step in a federal strategy for resource conservation. It would impact immediately the disposal crisis at hand, and it would help "close the circle" on the depletion of our limited resources.

FINANCIAL ASSISTANCE FOR RESOURCE RECOVERY

Cities are already bearing the national burden of increasing solid waste costs. The cost for municipal refuse collection and disposal services, both residential and commercial, is placed at $6.4 billion this year and is estimated to reach $7.8 billion by 1976.

In FY 71, our 48 largest cities spent 47 percent of their total environmental expenditures for solid waste management. That same year, of the total direct solid waste expenditures for federal, state and selected large local governments, 98 percent came from local governments.

Clearly, cities are paying their way in solid waste. But cities should not be expected to commit capital investments to resource recovery or to assume the risk of high technology experiments in the face of dismal marketing prospects for recovered materials and in light of promising but unproven recovery processes.

Ultimately, the total costs and the most crucial losses go beyond city budgets to the nation's declining reserve of natural resources. The disposal problem is merely one side of the resource limitation problem. Much attention has been given to gauging the environmental and fiscal impact of inadequate solid waste management. The nation's total resource loss due to the lack of federal promotion and implementation of a national program of resource conservation and recovery has not been calculated. But even a superficial accounting of the nation's total resource and energy losses--our long term economic loss--leaves the conclusion that we are heavily on the debit side of the ledger.

Both the short term urgency and the long term cost effectiveness of national initiatives toward resource recovery are inescapable. The central question is: How shall we go about it?

OBJECTIVES

Because of the prevailing economic and environmental realities, the National League of Cities and the United States Conference of Mayors Solid Waste Management Task Force finds it imperative that this nation utilize a system of financial and economic incentives to reach the following objectives at the earliest practicable time:

1. Provision of solid waste management, disposal and resource recovery facilities to meet the requirements of environmental standards established

2. Maximum feasible recovery of resources from our solid waste stream

3. Advancement of the state of the art on a continuing basis

STRATEGIES

Low-Cost Loans

To support the construction of solid waste management, disposal and resource recovery facilities, we recommend a program of below market interest rate loans provided by the federal government for 100 percent of the cost of facilities construction. Eligible facilities should be consistent with the following:

1. A state or regional plan that has been developed in conjunction with local governments

2. The purposes of the Solid Waste Act, as amended, the Water Pollution Control Act, the Air Pollution Control Act, and the Noise Control Act

3. A system of distribution of the costs of construction, operation and maintenance of the facility in a manner that minimizes regressivity

Borrowers should be able to reduce the amount of loan repayment, in amounts to be determined, if the facility produces any or all of the following features:

- Regionalization of disposal services
- Resource recovery
- Increased productivity and efficiency

The amount of repayment could also be reduced according to an accelerated depreciation schedule applied to facilities that are being replaced.

The entire loan program should be administered through the creation of a revolving loan fund, financed through a system of charges based upon the cost of disposal of materials in products and packaging. Foodstuffs and related items should be exempt from such a charge, although their packaging (a major source of waste) should not be exempt.

Incentives on the demand side

To maximize the incentive for resource recovery, the federal government as well as state and local governments must institute purchasing practices which, to the maximum extent feasible, assure the purchase of materials which are recyclable or reusuable or which contain recycled materials. Further, the federal government should take whatever other steps are feasible and possible to encourage the marketability of recycled or recovered resources. To give incentive to increased voluntary use of secondary materials, Congress should enact legislation to reduce freight and shipping rates for solid waste materials in transit to resource recovery facilities and/or secondary material users.

Expanded demonstration programs

In order to advance the state of the art, the federal government should provide a program of grants for the demonstration of new and improved solid waste management, disposal and resource recovery systems. For example, EPA should test and, if feasible, demonstrate the efficiency of burning waste as a fuel in an oil fired furnace as compared to coal fired. Projects should provide for the demonstration of systems utilizing different types of technology under a variety of applicable conditions, such as city size, georgraphy, climate, topography, or scale of system. More importantly,

additional demonstrations should be tied to various feasible and replicable management structures. Demonstrations should not be for the sake of technology alone; without effective management, technology is starved.

Prototype systems should be fully funded. Grants to test the transferability or replicability of systems should be funded at 75 percent of cost. The matching 25 percent may be financed by the proceeds realized from the sales of recovered resources. Land acquisition should be an eligible cost under this program.

The federal government should provide a program of grants to facilitate the continuation of research related to new and improved solid waste management, disposal and resource recovery systems. Research grants should be at 100 percent of cost.

Solid waste systems and resource recovery processes developed under the Solid Waste Disposal Act of 1965 and the Resource Recovery Act of 1970 should be evaluated on a comparative cost/benefit basis and the results made available to cities on a continuing basis. Comparisons should be done in a manner that allows for assimilation of the knowledge of these systems and processes by cities and private enterprise in solving disposal problems.

The Private Sector and Resource Recovery

The federal government should recognize the role and opportunity of private business and industry to use solid waste materials as (1) a source of heat or energy, or (2) a raw material for manufacturing. Private firms which convert solid wastes into energy or for use of sale as scrap materials separated from incoming waste should also be supported by federal programs. This support, in the form of accelerated depreciation, other forms of tax relief or direct research and capital facility grants, should be provided in the early years of operation. There should be a differential for firms which only separate and sell or use metals, glass and other materials and those firms which convert a part of solid waste for energy purposes, in combination with materials recovery.

Local and regional governments should guard against displacing markets and dislocating secondary materials handlers through zoning and licensing regulations. Too frequently, recycling plants cannot operate within certain restricted industrial zones. Industries that must be close to manufacturing and retail operations are forced to locate at distant points.

On the other hand, secondary materials industries and other private firms need to keep local governments apprised of plans for major resource recovery facilities or other capital programs that should be coordinated in an areawide solid waste plan.

Training

The minimum number of trained personnel needed for solid waste management across the country has been estimated at 600 per year. Current training programs are supplying less than 100 a year. With the advent of new and improved technologies, the need for properly trained, capable and competent personnel is increasingly important. Training programs should be stepped up and training grants augmented to meet current and future manpower needs.

However, regulation and enforcement alone, without provision of the resources and legal flexibility necessary to implement needed changes, would be destructive.

REGULATION AND SOLID WASTE MANAGEMENT

Regulation should be an essential part of national solid waste strategy. However, regulation and enforcement alone, without provision of the resources and legal flexibility necessary to implement needed changes, would be counter-productive. The need is for regulatory action that will spur sound solid waste management practices--nationally as well as locally--and regulatory measures that will facilitate multijurisdictional, interstate and regional solutions to the problems, not prevent them.

All but a few states now have solid waste control laws and many cities have implemented proper standards for solid waste management. Nevertheless, examples of solid waste mismanagement remain a national disgrace. On the one hand, federal legislation is required to make uniform the plethora of differing solid waste management standards at the state and local level, especially for interstate transportation. On the other hand, our survey indicates that cities desire operating guidelines, promulgated in consultation with general purpose local government, which allow some flexibility in keeping with varying local circumstances.

Furthermore, regulation of solid waste management should relate to these interacting factors: national solid waste generation, state and local planning, local collection and disposal, interstate transportation and interjurisdictional agreements.

The National League of Cities and the United States Conference of Mayors Solid Waste Management Task Force makes the following specific recommendations:

INTERSTATE, STATE AND LOCAL PLANNING

The federal government must provide support for the establishment of solid waste management and resource recovery plans. These plans should be established on a state-wide basis, but smaller units of general purpose local government should also be given the opportunity to develop such plans and to have them funded by the federal government.

Similarly, we believe the federal government should set standards for environmentally sound solid waste disposal practices and that state governments should have enforcement jurisdiction to insure that those standards are met. The Congress must recognize that in most instances the failures of adequate local solid waste management are caused not by lack of will, but rather by lack of resources and by restrictions on action.

Grants should be made to state, interstate, municipal, intermunicipal agencies and organizations composed by local elected officials of general purpose governments which are eligible for assistance under section 701 (g) of the Housing Act of 1954. Political jurisdictions or any combination of such jurisdictions--whether interstate or intrastate--should be permitted to prepare solid waste management plans. These should be eligible for grant support if they are compatible with state plans.

Planning areas should be consistent with obvious solid waste generation and collection areas--whether beyond or within a single state boundary--instead of by arbitrary division into substate regions. In other words, the geographical jurisdiction of each planning area should be congruent with the boundary of the environmental problem. If this condition is not met, solid waste management decisions will be made with only a partial accounting of their full costs and benefits.

FEDERAL LEGISLATION AND STANDARDS

The federal government should tax, control, regulate and, where necessary, prohibit practices which

aggravate the nation's disposal crisis. Local governments should not be forced to bear costs they did not create. Responsibility for and cost of disposal of appliances, vehicles, machinery and other bulk items should be assigned by statute to the appropriate authority and should be funded through costs included in the purchase price.

Federal standards should be established to curtail packaging practices, product configurations and other activities adding excessively to the volume of solid waste or contributing directly to disposal difficulties. The recyclability and disposability of products and packaging should be addressed and steps should be taken to discourage and regulate the use of non-destructible materials.

INTERJURISDICTIONAL CONTRACTS

Legislation is needed to permit any municipality or other local political jurisdiction to enter into long-term contracts with any individual firm, municipality, state or the federal government for the purpose of disposing of solid waste. At the same time, transportation and operational standards for interstate solid waste disposal systems should be studied. Legislative alternatives should also be explored by government agencies at all levels and by the Congress to insure that the operation of sanitary landfills and recovery plants, as well as solid waste transportation to the site, meet federal standards.

Any political jurisdiction should have the right to prevent the establishment of a sanitary landfill or other disposal process within its jurisdiction. Once having voluntarily entered into a contract for the disposal of solid waste, however, that political jurisdiction should not have the right to end that contract arbitrarily or prematurely as long as the original terms of the agreement are being met.

REGIONAL ORGANIZATIONS

National legislation should guarantee that regional solid waste management organizations can, with the initial concurrence and continuing commitment of general purpose local governments, contract with municipalities

for the disposal of solid waste on a long-term basis under the same terms as noted above.

Stronger state action is needed to facilitate multijurisdictional and regional systems and provide for regional disposal sites. Mechanisms that allow municipalities to band together under a single operating authority should be sought in all state laws.

NATIONAL DISPOSAL SITES

To meet the national disposal crisis, the administrator of EPA should begin a survey of possible national disposal sites for refuse, particularly hazardous wastes, on lands currently owned by the federal government. The federal government owns and manages one-third of the nation's land area. Use of federal lands for disposal would not encroach upon national park, recreation or wilderness areas.

At the same time, a large interstate landfill project should be brought into operation. In addition, Congress should mandate the allocation of research and development funds to study the environmental impact of strip mine reclamation by solid waste landfill.

TRANSPORTATION

The administrator or EPA should be given authority to set standards for the interstate and intrastate transportation of solid waste. We need uniform federal standards on the transportation of wastes were interpreted differently in two adjoining states through which a remote disposal route was proposed.

CONCLUSION

Considerable progress in solid waste management has been made through the impetus of the Solid Waste Disposal Act of 1965 and the Resource Recovery Act of 1970. However, the commendable but limited efforts made to date will not assure our cities, suburbs and counties of timely answers to their many-sided problem.

The national need is critical. Half of our cities are running out of disposal sites and the nation is rapidly depleting its resources. A federal regulatory program that focuses on hazardous wastes will address only one limited phase of the national need. In addition, the findings of the Congress expressed in Section 202 (a) (6) of the original 1965 Act still apply, in our view, to the national need today, namely that "the problems of waste disposal... have become a matter national in scope and in concern and necessitate federal action through financial and technical assistance and leadership in the development, demonstration, and application of new and improved methods and processes to reduce the amount of waste and unsalvageable materials and to provide for proper and economical solid waste disposal practices."

The alarm over solid waste acceleration and resource depletion can be transformed into the golden opportunity of resource conservation if we take the right steps--and if we take them now. The disposal crisis now facing the nation's cities should have high priority and it must be dealt with on a national basis, rather than placing the entire burden on individuals or their cities.

APPENDIX

THE SOLID WASTE NEEDS ASSESSMENT

RESPONDENTS

The Sample

Questionnaires sent out	353
Breakdown:	
Cities over 100,000 population (100%)	153
Cities under 75,000 population (random sample)	200
Questionnaires returned	138
Return rate:	
Percent of questionnaires sent	39%
Percent of cities over 25,000 population	17%

Who Responded?

Public works directors	40.0%
City managers	14.3%
Departmental administrators	14.3%
Mayors	13.0%
Sanitation department	11.0%
Environmental or solid waste task forces	2.8%
Other	4.6%

Regional Distribution of Respondents

Northeast	34%
Southeast	21%
Northwest	24%
Southwest	21%

City Size of Respondents

Under 50,000	20%
50,000 to 150,000	53%
150,000 to 400,000	16%
400,000 to 700,000	6%
Over 700,000	5%

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RESULTS

Priority of Problems

For cities in our survey, the most pressing problems of solid waste management are:

1. Disposal sites
2. Disposal methods
3. Collection
4. Financing
5. Labor/personnel
6. Recycling
7. Transportation
8. Separation and processing
   management
   safety
9. Lack of markets for secondary materials
10. Jurisdictional
11. Source reduction

Method of Disposal

The methods of disposal currently used most often and the percent of cities employing these methods are:

Landfill	79.0%
Landfill and incineration	11.0%
Landfill and recycling/resource recovery	4.4%
Incineration	2.1%
Landfill, incineration, recycling/ resource recovery	1.4%
Landfill and shredder	1.4%
Incineration and recycling/resource recovery	.7%

Projected Capacity

Employing these disposal methods, cities say their projected capacity to accommodate current and anticipated waste loads is

Less than 1 year	6.0%
1 to 2 years	8.5%
2 to 3 years	11.0%
3 to 5 years	21.0%

5 to 10 years	23.0%
10 to 15 years	30.5%

The short range versus long range breakdown was

under 5 years	46.5%
5 years to 15 years	53.5%

Use of Landfill

Of those cities using landfill for disposal

91% use a state approved site
9% use an unapproved site

Role of State Government

As indicated by city officials, the most appropriate roles of state government are (in order of preference)

1. Financial assistance
2. Regulation and standards
3. Provision of regional disposal sites
4. Research of solid waste management problem
5. Creation of state solid waste advisory board management assistance
6. Increased regional approach to total problem
7. Encouragement of recycling/resource recovery programs
8. Better education programs on solid waste problems and solutions.

Hazardous Wastes

City management of hazardous wastes is conducted in the following manners:

Do not accept hazardous wastes	7%
Use landfill sites (either primary or residual)	25%
Hold the producing industrial sector responsible for disposal	20%
Employ carefully guarded special methods of disposal	15%
Export their hazardous wastes	7%
Have no special method, no provision and saw hazardous wastes as a deficient area	6%

Financing

The primary methods of financing the solid waste management systems currently employed by cities in our survey are

Collection:	General revenue	54.3%
	Local user charge	32.3%
	General revenue and local user charge	10.2%
Disposal:	General revenue	52%
	Local user charge	28%
	General revenue and local user charge	16%

Capital Outlay

The most pressing solid waste dollar needs of a random sample of 138 cities resulted in an estimated total capital outlay of $399,245,675.00 and an estimated total operating cost of $47,832,640.00.

Average capital cost	$4,928,959.00
Average operating cost	$ 586,823.00

Use of Revenue Sharing

Percent of sample currently using revenue sharing to meet the solid waste problem 27%

Legislation Needed

When asked what they would most like to see embodied in new solid waste legislation, city officials expressed these views (in order of preference).

1. Enhancement of recycling/resource recovery programs
2. Technical and management assistance
3. Financial aid to cities to meet present and future regulations
4. Provision of standards and regulations
5. Elimination of rail rate inequities
6. Further research, development and demonstration programs
7. Control of packaging and returnable containers

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